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4, 7TH MAIN MALLESWARAM, BANGALORE -3

QC ABSTRACT

NAME OF WORK: Improvements to roads and drains at Thindlu and Kodigehalli Surrounding areas in ward No.09 Vidyaranyapura

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Cement Concrete Pavemet (M30)	Compressive Strength(7days and 28days)	5 sets /51-100 cum	62.24	10	10
6	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1

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7	BM	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral Aggregate	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
8	BC	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
9	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1
10	TACK COAT	Rate of spread	One Test		1	1

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Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2023-06-05-01** **Date: 24-04-23**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP,
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Thindlu and Kodigehalli Surrounding areas in ward No.09 Vidyaranyapura
Agency	:	Sri.K V Subba Reddy, No:106/B,Ashwatha Nagar, RMV 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/56/2021-22
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	20-04-23
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 269:2015 Ordinary Portland cement Specification , IS 4031 (Part 4,5):1988 IS 4031 Part 1 (RA 2021) DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, (RA 2018) Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, (RA 2019) Determination of Soundness, Clause 5, Clause 6 IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, (RA 2019) Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11, (RA 2019)DETERMINATION OF DENSITY , Clause 6
Date of test	:	21-04-23
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 269:2015
1	Fineness by dry sieving (%)	2.56	_
2	Finess by Air permeablity method (m^2/kg,Min)	284.5	225m^2/kg, Min
3	Density (gm/cc)	3.12	_
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	155 minutes	Not less than 30 minutes
6	Final Setting time	260 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

Note:

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2023-06-05-01** **Date: 19-05-23**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Thindlu and Kodigehalli Surrounding areas in ward No.09 Vidyaranyapura
Agency	:	Sri.K V Subba Reddy, No:106/B,Ashwatha Nagar, RMV 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/56/2021-22
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	20-04-23
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 269:2015 Ordinary Portland cement Specification , IS 4031 (Part 4,5):1988 IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, (RA 2019) Determination of Compressive Strength, Clause 6
Date of test	:	21-04-23
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 269:2015
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	58.5N/mm^2	Not less than 53 N/mm^2

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Format No: CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2023-06-05-01** **Date: 24-04-23**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Thindlu and Kodigehalli Surrounding areas in ward No.09 Vidyaranyapura
Agency	:	Sri.K V Subba Reddy, No:106/B,Ashwatha Nagar, RMV 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/56/2021-22
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	20-04-23
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2021 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	20-04-23

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	220	220	1.5	98.5	90-100
3	20 mm	7460	7680	51.2	48.8	30-70
4	10 mm	4260	11940	79.6	20.4	10-35
5	4.75 mm	2860	14800	98.7	1.3	0-5
6	Pan	224	15024	100.2	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2023-06-05-01** **Date: 24-04-23**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.9	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.3	
3	Specific Gravity	2.64	_
4	Bulk Density(Loose) (Kg/l)	1.41	_
5	Bulk Density(Compacted) (Kg/l)	1.47	_
6	Water Absorption(%)	0.23	_

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2023-06-05-01** **Date: 11-03-23**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Thindlu and Kodigehalli Surrounding areas in ward No.09 Vidyaranyapura
Agency	:	Sri.K V Subba Reddy, No:106/B,Ashwatha Nagar, RMV 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/56/2021-22
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	09-03-23
Type of Mix	:	WMM (Wet Mix Macadam)
Date of Test	:	09-03-23
Oven Dry Weight	:	11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	310	310	2.8	97.2	95-100
22.4	2265	2575	23.4	76.6	60-80
11.2	2186	4761	43.3	56.7	40-60
4.75	2245	7006	63.7	36.3	25-40
2.36	1620	8626	78.4	21.6	15-30
0.6	635	9261	84.2	15.8	8-22
0.075	1350	10611	96.5	3.5	0-5

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2023-06-05-01** **Date: 11-03-23**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Thindlu and Kodigehalli Surrounding areas in ward No.09 Vidyaranyapura
Agency	:	Sri.K V Subba Reddy, No:106/B,Ashwatha Nagar, RMV 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/56/2021-22
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	09-03-23
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	:	09-03-23

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2023-06-05-01** **Date: 11-03-23**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Thindlu and Kodigehalli Surrounding areas in ward No.09 Vidyaranyapura
Agency	:	Sri.K V Subba Reddy, No:106/B,Ashwatha Nagar, RMV 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/56/2021-22
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	09-03-23
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test	:	09-03-23

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.9%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.2%	
Combined Flakiness and Elongation Index for WMM	25.1%	

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TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2023-06-05-01** **Date: 16-03-23**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Thindlu and Kodigehalli Surrounding areas in ward No.09 Vidyaranyapura
Agency	:	Sri.K V Subba Reddy, No:106/B,Ashwatha Nagar, RMV 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/56/2021-22
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	14-03-23
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-2021, IS: 1202-1220(1978) (Reaffirmed-2019)
Date of Test	:	14-03-23

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**60**	Min 45mm
2	Softening Point, °C	**51.6**	Min. 47°C
3	Ductility, cm	**97**	Min. 40cm
4	Flash point, °C	**290**	Min. 220°C
	Fire point, °C	**302**	

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TEST RESULTS OF GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2023-06-05-01** **Date: 23-03-23**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Thindlu and Kodigehalli Surrounding areas in ward No.09 Vidyaranyapura
Agency	:	Sri.K V Subba Reddy, No:106/B,Ashwatha Nagar, RMV 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/56/2021-22
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	20-03-23
Type of Mix	:	BM-Plant (Bituminous Macadam)
Date of Test	:	20-03-23
Weight of Sample(gm)	:	5000

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0	100	100
19	160	160	3.2	96.8	90-100
13.2	520	680	13.6	86.4	56-88
4.75	2745	3425	68.5	31.5	16-36
2.36	912	4337	86.7	13.3	4-19
0.3	365	4702	94.0	6.0	2-10
0.075	237	4939	98.8	1.2	0-8
PAN	63	5002	100.0	0.0	0

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